REPORT DOCUMENTATION PAGE

E ... 2 ...

AICAL TEAD OF TOO CEAD

Form Approved
OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Actington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.

Davis Highway, Suite 1204, Arlington, VA 22202-4302		idget, Paperwork Reduction Project (0704	-0188), Washington, DC 20503.
I. AGENCY USE ONLY (Leave blank) 2. REPORT DATE 3. REPORT TYPE AND DATES COVERED			
	3-27.01	tinal 6,	101/00 to 12/31/00
4. TITLE AND SUBTITLE Capturing Unce Tactical/Environment	Let I the	Som was 5. Fl	INDING NUMBERS
Capturing ance	many in	Certification	1
1 1 1/6	1/ 0:1	~	
lactical/Enviro	mulutal 11cd		00014-00-1-0770
o. Admonds		/V.	00014-00 1-0110
Robert N. Mil	Nec		
Modern Los Las	701.		
7 DEPENDMING ORGANIZATION NAME	(C) AND ADDRECC(EC)	0.00	REFORMING ORGANIZATION
			PORT NUMBER
Corvallis, OR 97331			NO138A
/			100130H
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) 10. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)			PONSORING/MONITORING
A A S P			GENCY REPORT NUMBER
a Hate Ca	top Tower On	e	
Ballston Cen	Site of the of		
800 N. au	ing street	1 ()	
Ballston Centre Toner One 800 N. Quing Street Arlington, VA 22217-5660			
I 11 SUPPLEMENTARY NOVES			
	•	20046	0412 042
		700 I	J416 U46
12a. DISTRIBUTION/AVAILABILITY STA	TEMENT	126.	DISTRIBUTION CODE
	. 0	1	
10 / 1	led Public	Access	
Unlimit	ta janic.		
13. ABSTRACT (Maximum 200 words)			
This contract su	apported my participa	ation in the working	g group on
the "Capturing Uncertainty in the Common Tactical/Environmental Picture" Department Research Initiative (DRI). The goal of the			
working group was to hone the scientific focus of the DRI during			
a pilot period preceding the larger expert workshop which took			
place in October, 2000. The ultimate goal of the DRI is to			
develop a formalism for capturing, calculating and representing			
uncertainty. By uncertainty we mean the environmental variability			
that is knowable and that we can simulate, the environmental			
variability that is knowable but that we cannot simulate, the			
environmental variability that is not knowable, and the error inherent in representations and calculations of the environmental			
inherent in repr	esentations and calc	culations of the env	ironmental
field, acoustic	field, and target	estimation. My work	consisted
of active parti	icipation in the wo	orking group, prepa	n meetings
supporting mater and at the exper		ons at working grou	p meetings
and at the exper	C MOTIVATION.		
14. SUBJECT TERMS			15. NUMBER OF PAGES
The state of the s			13. 110111211 01 11122
			16. PRICE CODE
		•	
17. SECURITY CLASSIFICATION 18.	SECURITY CLASSIFICATION	19. SECURITY CLASSIFICATION	ON 20. LIMITATION OF ABSTRACT
OF REPORT	OF THIS PAGE	OF ABSTRACT	

FINAL TECHNICAL REPORT ONR GRANT N00014-00-1-0770 ROBERT N. MILLER

Capturing Uncertainty in the Common Tactical/Environment Picture

I participated in the working group on the "Capturing Uncertainty in the Common Tactical/Environmental Picture" DRI. My participation consisted of attendance at the meetings, preparation of supporting materials and active contribution to the design and specification of the illustrative problem.

The stated goal of the DRI was to characterize, calculate and transfer uncertainty in the environment to calculations of acoustic fields and to the subsequent use of the acoustic fields in estimation and displaying of targets. Quantitative description of the transfer of uncertainty in the environment to calculations of acoustic fields, especially those involving prediction of environmental conditions, requires application of mathematical techniques drawn from statistics, probability theory and theory of stochastic processes. Similar techniques are required for data assimilation.

During the course of my funded participation in the steering committee for the DRI, I attended the meetings of the steering committee and contributed to the specifications of the problem. I consulted with other groups on ocean modeling and data assimilation considerations, and prepared several presentations for meetings of the steering committee and for the experts meeting held at Airlie House in October. Copies of the presentation and the poster are available on the web at the addresses shown below.

LIST OF PUBLICATIONS

"Bayesian Inference." With L. Stone. available in PDF or PowerPoint form from www.onr.navy.mil/sci_tech/chief/cuwg/Workshop/Posters/posters.html

"Methods for Propagation of Uncertainty." Available in PowerPoint form from www.onr.navy.mil/sci_tech/chief/cuwg/Workshop/Agenda/agenda.html